

REMARKS

In the Office action noted above, claims 1-30 were allowed, claims 31-37 and 48-62 were withdrawn from consideration, claims 38, 41-44 and 46-47 were rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,260,683, Tanaka et al., and dependent claims 39, 40 and 45 were considered to recite allowable subject matter. In the instant response, claims 31-37 and 48-62 are cancelled and the rejection of claims 38, 41-44 and 46-47 is respectfully traversed. The following remarks will support Applicants' position regarding the rejected claims.

Tanaka et al. is directed to a tire pressure detecting apparatus for a vehicle, which apparatus includes three coils as shown in the diagram of Figure 20 thereof. An excitation coil 99 and a receiving coil 101 are provided in the body of the vehicle for obtaining magnetic coupling with a third coil 13 which is part of a resonant circuit C1 (see col. 9, lines 10-13) at the tire. Coil 99 excites coil 13 with a magnetic flux field into a resonant frequency which is imparted via a magnetic flux field to the receiving coil 101 and used to determine the pressure of the tire. The coupling among the three coils is transformer-like using core materials for enabling conduction of the magnetic flux.

Tanaka et al. use the terms "magnetic coupling" and electromagnetic coupling" interchangeably in the text of their patent (refer to the Abstract; col. 9, lines 38-40 and col. 10, lines 10-12). However, it is clear from the description of Tanaka et al. that their design supports only magnetic coupling among the three coils. The magnetic flux field coupling is confirmed by Figure 19 which shows the excitation and receiving coils 99 and 101 wound around iron cores 103 and 105, respectively, and Figure 30 which refers to a frequency range of 15-19 kHz conducive to a magnetic flux coupling frequencies. No mention is made in Tanaka et al. of electric field coupling beyond the loose reference to "electromagnetic".

In contrast, independent claim 38 recites, in substance, that the resonant circuit responds to the induced current with an E-field signal at a resonant frequency commensurate with the capacitance of the variable capacitance sensor; a receiving circuit E-field coupleable to the resonant circuit and operative to receive the E-field signal at the resonant frequency and to generate a signal representative of the E-field signal; and a processing circuit coupled to the

receiving circuit for processing the generated E-field representative signal to generate a pressure reading of the tire.

In addition, independent claim 41 recites, in substance, the steps of: E-field coupling the resonant frequency from the resonant circuit to a receiver circuit; and generating a pressure reading from the E-field coupled resonant frequency.

This aspect of Applicants' invention recited in claims 38 and 41 is supported in Applicants' application in Figure 1 which shows an E-field loop antenna 32, E-field sensing circuit 34 and RF receiver and processing unit 20, and in paragraph 33. Note that Applicants enable the use of the E-field signal by the operational RF coupling frequency range of 14-20 mHz and the E-field loop antenna 32. No such E-field coupling capability among the operational coils is taught by Tanaka et al., nor is there any suggestion of such a coupling which could motivate someone to realize such a design. Rather, the operational frequencies referred to in Tanaka et al. of 15-19 kHz and the iron cores of the coils used in the design of Tanaka et al. lead anyone skilled in the pertinent art to an understanding that the design is one solely of transformer-like, magnetic flux coupling among the three coils. In Tanaka et al., it is solely the magnetic field coupled signal in coil 101 that is used by the detecting circuit 340 for determining tire pressure.

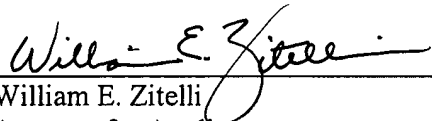
Accordingly, independent claims 38 and 41 both recite an inventive aspect as noted above that is patentably distinguishable from Tanaka et al. and thus, are clearly novel over and not obvious in view of Tanaka et al. As regards the rejection of claims 42-44, they all recite steps involving the E-field coupled resonant frequency which is not taught or suggested by Tanaka et al. In addition, all of the rejected dependent claims 42-44 and 46-47 are dependent from independent claim 41 and include all of the limitations thereof. Therefore, they also are novel over and non-obviousness in view of Tanaka et al. for at least the same reasons given above for their parent claim 41.

In view of the above, it is respectfully requested that the obviousness rejections of claims 38, 41-44 and 46-47 be withdrawn. Applicants acknowledge that dependent claims 39, 40 and 45 are all considered allowable, but are taking no action at this time regarding these claims because they contend that all of the claims 38-47 are allowable.

On another matter, Applicants filed an IDS and form PTO/SB/08A disclosing some 22 references with the instant application (i.e. 8/25/03). The examiner has made no reference to this disclosure in the Office action nor has he provided an initialed copy of the form PTO/SB/08A as an indication of his review of the disclosed references in connection with the examination of the instant application. Accordingly, Applicants respectfully request an initialed copy of the form PTO/SB/08A as an indication of his review of the disclosed references at the earliest opportunity.

Since the application is considered in condition for allowance, an early issuance thereof is earnestly solicited. While Applicants believe that no additional fees are due the Office at this time, the Commissioner is hereby authorized to charge any additional related fees, or credit any overpayments, to Deposit Account No. 03-0172.

Respectfully submitted,


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